# New Products: AMSR-E Sea Ice and Blue Marble: Next Generation

We are pleased to announce that two new sets of imagery products are now available in GIBS in the Geographic, North Polar Stereographic, South Polar Stereographic, and Web Mercator projections:

- Aqua / AMSR-E (Advanced Microwave Scanning Radiometer-EOS) Sea Ice consisting of
  - Sea Ice Brightness Temperature (89H GHz B Scan), 2002 - 2011
  - Sea Ice Brightness Temperature (89V GHz B Scan), 2002 - 2011
  - Sea Ice Concentration (12km), 2002 - 2011
  - Sea Ice Concentration (25km), 2002 - 2011
  - Snow Depth Over Ice (12km), 2002 - 2011
- Blue Marble: Next Generation consisting of
  - Blue Marble: Next Generation Base (August 2004)
  - Blue Marble: Next Generation w/ Topography (August 2004)
  - Blue Marble: Next Generation w/ Topography and Bathymetry (August 2004)

More details regarding these products are found below:

Aqua / AMSR-E Cryosphere Products
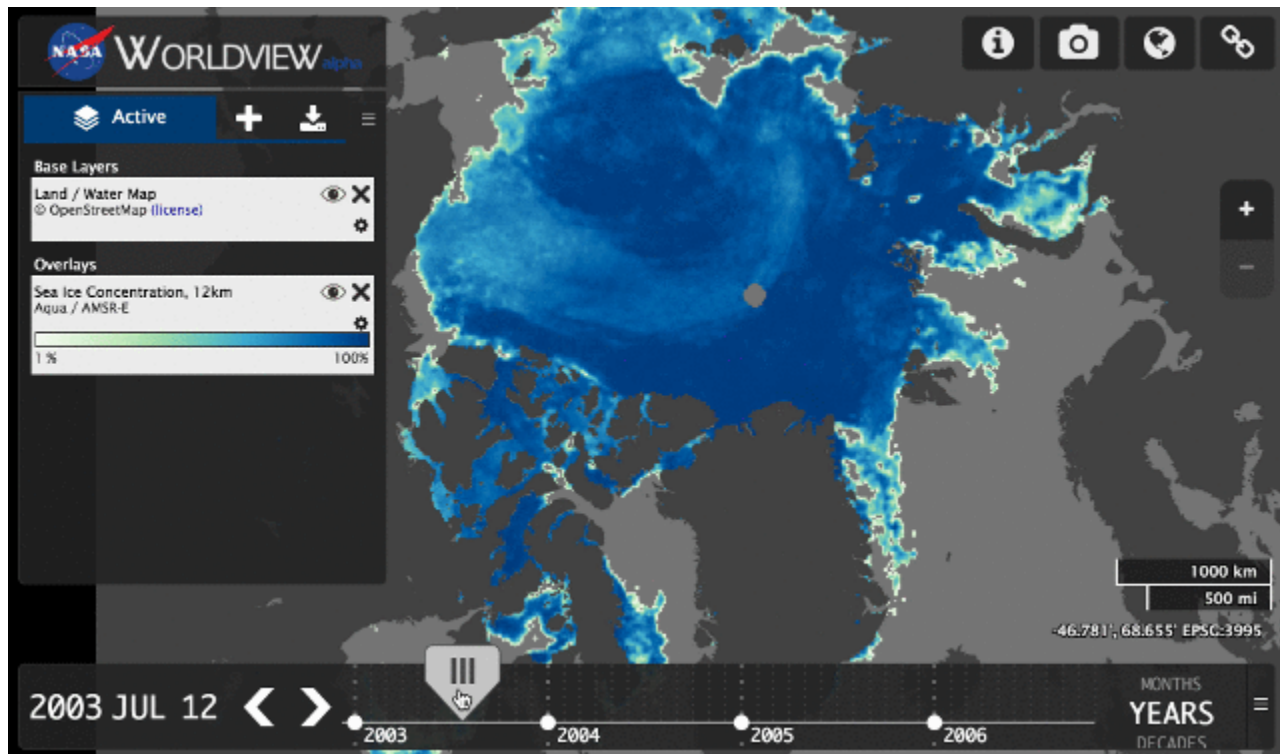
AMSR-E Sea Ice Concentration (12km)

The Advanced Microwave Scanning Radiometer-EOS (AMSR-E) instrument on the NASA Earth Observing System (EOS) Aqua satellite provides global passive microwave measurements of terrestrial, oceanic, and atmospheric variables for the investigation of global water and energy cycles. The Level-3 gridded products (AE_SI6, AE_SI12, AE_SI25) includes brightness temperatures collectively ranging from 6.9 through 89.0 GHz , sea ice concentration, and snow depth over sea ice. Sea ice concentration and brightness temperatures include daily ascending averages, daily descending averages, and daily averages; snow depth over sea ice data is a five-day running average. The GIBS and AMSR team have selected the primary science parameters contained within each gridded product and each spatial resolution for increased visualization usage. Note that the recent reprocessing of the AMSR-E version 3 algorithm includes an improved Antarctic land mask with an updated ice shelf definition, created by the National Ice Center Science Department in June 2011, as well as an updated shoreline developed from ENVISAT and RADARSAT imagery from October 2009 to April 2010.

More information about the AMSR-E Level-3 gridded products is found here. More information about the version 3 reprocessing is found here.

Blue Marble: Next Generation

Blue Marble: Next Generation w/ Topography and Bathymetry (August 2004)

The Blue Marble: Next Generation is a series of images that show the color of the Earth's surface for each month of 2004 at moderate resolution (500 meters/pixel) at a global scale. These monthly images reveal seasonal changes to the land surface: the green-up and dying-back of vegetation in temperate regions such as North America and Europe, dry and wet seasons in the tropics, and advancing and retreating Northern Hemisphere snow cover. In 2004, the generation of the Blue Marble: Next Generation imagery utilized new techniques allowing the computer to automatically recognize and remove cloud-contaminated or otherwise bad data—a process that was previously done manually. The quality of the Blue Marble imagery was notable for its time. So much so that Steve Jobs and team selected it for the default wallpaper for the Apple iPhone.

GIBS has selected the August monthly imagery for the three static layers available for use. August was selected based on the lower concentration of snow that exposes more land features. The Blue Marble: Next Generation imagery includes the a base image along with bathymetry and topography visual enhancements. These enhancements are described below:

Bathymetry

Bathymetry is a digital image of the undersea land surface and water depth. Bathymetry is the underwater equivalent of land topography. In the maps provided here, shading indicates changes in slope or depth. Much of the data on ocean bathymetry come from "soundings." To collect a sounding, scientists use sonar devices to emit a sound wave that passes into the water. By measuring how long it takes the sound wave to bounce off the ocean floor and return to the sonar, scientists can estimate the depth of the water. Other characteristics of the returned sound wave can help reveal the shape and size of features on the sea floor. These images represent ocean depths between -8000m and 0m (surface).

Topography

Land topography is a digital image of the three-dimensional structure of the Earth's surface. Shading indicates changes in slope or elevation. The relief shading in this topographic map comes mostly from elevation data collected by space-based radars. Topography not only gives a realistic picture of what the Earth's surface actually looks like, it also helps scientists determine things like how rivers and streams drain through the landscape, where lowlands are prone to flooding, how plate tectonics or erosion are building or wearing away mountains, where hills may be prone to landslides, or how a volcanic eruption changed the shape of a mountain. Topography is also one of the factors that influences where particular ecosystems exist. Therefore topography is one of the factors that scientists can use to predict where certain plants or animals, such as endangered species, might be found.

More information about the Blue Marble: Next Generation imagery products can be found here.